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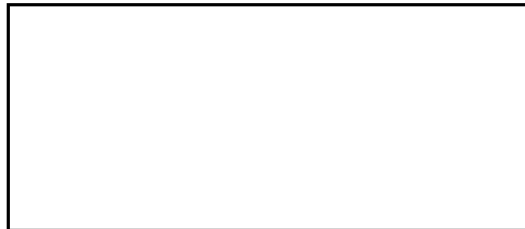
Projects 552 & 552A
Progress Report, September 1964

Gentlemen,

Enclosed are three (3) copies each of 
Progress Report on Projects 552 and 552A for the period September
1964. Also, attached is a Review of Meeting, 9 October 1964.

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Very truly yours,



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Vice President - Marketing

RJL/de

Encl: (3) P.R. - 4 pp
(3) Att. I

**Declass Review by
NIMA/DOD**



PROGRESS REPORT
For
VERSATILE, HIGH PRECISION STEREO
POINT TRANSFER DEVICE

Period Covered: September 1964
Dated: 16 October 1964
Job No.: #552 and #552A
Document No.: OD-215

PROGRESS REPORT

For

VERSATILE, HIGH PRECISION STEPEO
POINT TRANSFER DEVICEOBJECTIVE ASSEMBLY POINT MARKING ASSEMBLY

Laser optics have been assembled into objective assembly and are now being aligned in preparation for test. Laser appears to work reliably, but will require copious amounts of cooling medium to reduce output degradation during rapid use of laser. Because of this need of cooling, we will attempt to clean and cool compressed air adequately.

Preliminary film marking shots indicate numerals and point mark will give clear images on film specimen used. We would appreciate immediately, however, samples of film that are expected to be used in service so that a better evaluation can be had.

Balance of objective assemblies are being adjusted for system use and will be mounted on carriages before the end of October.

Vibration control measures mentioned in last report have been incorporated with some improvement in resolution during scanning. The redesigned Y drive vibration isolation mounting has had considerable attention in optimizing its purpose. Many carriage damping experiments have also been tried with small success. As a result, system resolution should be above 100 lines/mm but below 200 lines/mm in the few rough areas of operation and possibly above 300 lines/mm in the balance of the frequency operation.

EYEPiece ASSEMBLY

Shutters for point marking safety are installed and operating. Eyepiece assembly is now ready to mount on to superstructure arm and joining with fiber optics cable.

SUPERSTRUCTURE AND EYEPiece SUPPORT

Assembled and ready for eyepiece assembly.

BASE FRAME AND DRIVE MOTORS

Comments on vibration isolation seen under "Objective Assembly".

VACUUM PLATENS AND MANIFOLDS

Platens have been redesigned to overcome problem of microgroove visibility by replacing them by three (3) transverse large grooves, about 1mm wide, equally spaced across the film viewing area. Air pockets under film are evacuated quickly, sometimes requiring alternating "release" and "hold" modes once or twice to secure complete holddown on 9 inch film. If information area falls on top of the large grooves, film will have to be moved a small amount.

Manifolds have been secured. They are made of transparent silicon elastomer. However, friction properties of the silicone elastomer and gum rubber will make manual film advancing quite difficult. As a solution, we have wrapped teflon tape around leading edges of molded rubber. This brings an appreciable improvement, but visibility through molded rubber is out of the picture. These low friction sealing lips have also helped the film to slip under manifolds during the holddown cycle. Therefore, with the materials we have examined, insistence upon transparent manifold seals will cause severe delay in equipment completion.

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MANUAL FILM DRIVE

Because of customer's objection to film spool overrunning, we have installed an electro-mechanical system to brake all four (4) spools at once, regardless how film is loaded. A generator and circuit senses operator's motions and releases or applies brakes as needed.

HIGH INTENSITY LIGHT SOURCE

Assemblies are complete, installed and wired. Cooling fans for the lamp have just been installed and are wired for operation.

ELECTRICAL SCHEMATICS AND WIRING DIAGRAMS

Modification to laser power supplies and picking up of last minute circuit additions and corrections are being handled at present. Wiring is complete on main instrument frame, but not completed on control and auxiliary cabinet.

JOY STICK

Design of harness rigging is finished and fabricated parts are awaiting final assembly. Specially made potentiometers have experienced enormous delays from loss in mails to rejected potentiometers. A new vendor has been able to supply parts needed and is expected to deliver parts in the next few days. With receipt of the above potentiometers, wiring and mechanical assembly can be completed on the joy stick, and therefore, a thorough electrical system checkout can be made.

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Work To Be Completed

1. Complete experimentation and development work in film hold-down system and point marking.
2. Follow up and assist manufacturing and purchasing phases.
3. Complete all possible subassemblies.
4. Complete schematics and wiring diagrams.
5. Checkout completed subassemblies where possible.
6. Get system tests under way.

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ATTACHMEN I to [REDACTED] Progress Report #552 - OD-215
dtd 16 October 1964

12 October 1964
VWU:rf

REVIEW OF MEETING

Job: #552 and #552A
Date: October 9, 1964

CONTROL PANEL

a) Customer objected to high knob on high intensity reticle control.

Six: 1-1/4 skirtless knob on reticle.

b) Force on zoom control rocker switch high - can we get switches with less operating force.

c) Tilt control panel About 6 inches at rear would be desired.

d) Small diameter knobs on counter set knobs.

VACUUM HOLDDOWNS

Customer shown new platen design with three (3) transverse grooves.

System appeared to require great improvement on holddown reliability.

Commented on compressor noise. Questioned why rotary vane type in 405 could be used. [REDACTED] is stated that compressed air might possibly be oil laden. If this feature is abandoned then rotary vane type is feasible.

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PISTON THREADING

Switching does not allow both sides to be threaded at one time. e.g., if right is threaded, left brake is "ON".

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ATTACHMENT I to [REDACTED] Progress Report #552 - OD-215
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OVERRUN CONTROL

Threshold adequate. Slopiness in loop was noticed. They desire a tension in film during all modes of transport. A possible cause of sloppy look is poor alignment of rollers. Load on handle is high during transport.

RESOLUTION DURING SCANNING

200 L/MM would be quite satisfactory.

FILM PROTECTION TROUGH

With extreme film slack wires do not cover frame properly.

BEAM SPLITTER IN EYEPiece

Why not counterbalanced?